

REMARKS

In accordance with 37 C.F.R. § 1.116(b)(1), applicants have amended the specification and claim 11 and earnestly request entry of these amendments. The amendment to the specification responds to a requirement of form expressly stated on page 2 of the Final Office Action. The amendment to claim 11 responds to a requirement of form expressly stated on pages 2 – 3 of the Final Office Action.

Before entry of this Amendment, claims 1-11 and 13-23 were pending in the application. Claims 6-10 and 17-22 have been withdrawn from consideration. After entry of this Amendment claims 1 – 5, 11, 13 – 16 and 23 remain pending under examination. The number of total claims has not been increased, and the number of independent claims has not been increased beyond the number for which payment previously had been made.

Applicant has carefully considered the Examiner's Action of September 6, 2007, and the references cited therein. The following is a brief summary of the Action.

Claim 23 was rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claims 11 and 13-16 were rejected under 35 U.S.C. § 112, second paragraph, for failing to point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 11 and 23 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application Serial No. 10/294,420. Claims 1, 11 and 23 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5 and 20 of copending application serial No. 10/325,140. Claims 1, 11 and 23 were provisionally

rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application Serial No. 10/687,006. Claims 1 and 3 were rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 (WO 02/52071) in view of Maggio '134 (WO 00/65134 A1; US Patent No. 6,966,762 B1) and Kisler (USP 4,517,143). Claim 2 was rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1, and further in view of Trimble (WO 93/21370). Claims 4 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1, and further in view of Haynes '379 (USP 6,117,379). Claim 11 was rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 (FR 2,825,381; USP 6,974,316 B2) in view of Haynes '071 and Kisler. Claims 11 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over Schmit (WO 02/34990 A1; USPAP 2004/0028763 A1) in view of Kisler. Claim 13 was rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 in view of Haynes '071 and Kisler as applied to claim 11, and further in view of Trimble. Claim 13 was rejected under 35 U.S.C. 103(a) as being unpatentable over Schmit in view of Kisler as applied to claim 11, and further in view of Trimble. Claim 14 was rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 in view of Haynes '071 and Kisler as applied to claim 11 and further in view of Haynes '379. Claims 14 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Schmit and Kisler as applied to claim 11 and further in view of Haynes '379. Claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '134 in view of Davis et al (USP 6,660,218 B2).

For the reasons explained below, applicants respectfully traverse the rejection of claim 23 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

With respect to claim 23, the Final Office Action contends on page 2 thereof that:

the claim requires the force of attenuation to be provided “air consisting of attenuation air only entering . . . from the drawing slot sidewall.” The Examiner interprets this to mean that no other air may contribute to the attenuation force. This is more than with the Specification’s acknowledgement of air entering from a specific sidewall because the Specification does not preclude air from the other sidewall as the claim does; the Specification only requires a specific wall to provide air.

In accordance with 35 U.S.C. § 112, first paragraph, the originally filed claims constitute part of the written description of the invention. The original “wherein clause” of claim 23 in the application as originally filed stated:

wherein the pneumatic attenuation force is provided by attenuation air entering the drawing slot only from the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located.

The “wherein clause” language in amended claim 23 is as follows (with the changes identified by underlining the additions and lining through the deletions):

wherein the pneumatic attenuation force is provided by air consisting of attenuation air only entering the drawing slot ~~only~~ from the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located.

Thus, the present version of the “wherein clause” in claim 23 does not differ substantively from the original language in claim 23. Since the originally filed claim 23 was directed to this embodiment, it is respectfully submitted that the written description

adequately apprised the person of ordinary skill that the applicants had possession of the embodiment described by claim 23.

Moreover, since the “wherein clause” of the originally filed claim 23 provides part of the written description of the invention, applicants have amended the specification in order to expressly state the language that was in original claim 23. Accordingly, this amendment satisfies the written description requirement of 35 U.S.C. § 112, first paragraph, without adding any new matter.

Applicants have amended claim 11 to remove the indefiniteness and accordingly respectfully submit that claims 11 and 13-16 are now patentable under 35 U.S.C. § 112, second paragraph.

For the reasons explained below, applicants respectfully traverse the rejection of claims 1 and 3 under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 in view of Maggio '134 and Kisler.

The method of making a nonwoven web as called for in claim 1 includes the step of providing a plurality of fibers and the step of subjecting the fibers to a pneumatic attenuation force in a drawing slot. The velocity of the fibers is reduced in a diffusion chamber that is spaced from an exit of the drawing slot in the direction of travel of the fibers. The diffusion chamber is formed substantially between opposed diverging side walls. The fibers are subjected to an applied electrostatic charge before the fibers enter the diffusion chamber. The electrostatic charge is applied by two or more oppositely directed electrostatic charging units. Each of these electrostatic charging units includes an emitter device and a “target” or collector device and are “oppositely directed,” i.e., with at least one emitter device on each opposite side of the fibers so that an

electrostatic charge is generated from opposite directions across the traveling path of the plurality of fibers. The fibers are then collected into a web on a moving forming surface.

The obviousness rejection based on the combination of Haynes '071 and Maggio '134 in view of Kisler is still lacking an essential feature of claim 1, namely that the electrostatic charge is applied by two or more oppositely directed charging units such that at least one emitter device from at least one charging unit is configured on each opposite side of the fibers so that the electrostatic charge is generated from opposite directions with respect to the direction of travel of the fibers. Haynes '071 describes and illustrates a single charging unit within the fiber draw unit that includes rows 20 of emitter pins that produce a corona discharge against the target electrodes 22. Neither Haynes '071 nor Maggio '134 discloses or suggests the use of a second one of these charging units oppositely oriented such that the pins 20 would be on the opposite side of the fibers.

Kisler fails to compensate for this deficiency in Haynes '071 and Maggio '134. Haynes '071 and Maggio '134 employ the electrostatic charging units to make the fibers repel one another and thus separate the fibers and impose a preferential orientation of the fibers before the web is formed. As explained for example at Haynes '071 page 1, lines 15 – 17 (emphasis added):

the controlled application of **electrostatics provides separation of the fibers** or filaments and **directional distribution on the forming surface** to result in webs with desired preferential orientation and resulting web properties.

However, in contrast to Haynes '071 and Maggio '134, Kisler relates to a method and apparatus for uniformly charging a web of material after the web has been wound on roll, transported and then unwound from the roll.

Moreover, as shown in Kisler FIG. 1A, the emitters in the form of stainless steel bristles of brushes 24 and 36 are always physically oriented in the same direction with respect to the machine direction. The bristles are on the same side of the web. Claim 1 requires each of the opposite sides of the fibers to have an emitter. Kisler does not provide an emitter (bristles of brushes 24 and 36) on each of the opposite sides of the finished web, much less on each of the opposite sides of the fiber stream before the fibers are formed into a web and wound into a roll. Kisler's electrostatic emitters are not employed until long after the fibers have landed on the forming surface, been formed into a web, the web is rolled up into a roll, the roll is transported and mounted on the Kisler device, and the web is unrolled. Only then do Kisler's electrostatic emitters come into play. Thus, Kisler does nothing to teach the person of ordinary skill about using electrostatic emitters for purposes of separation of fibers or the directional distribution of the fibers before the fibers are collected on the moving forming surface.

Additionally, it would appear that Haynes '071 views the teaching of Kisler as merely providing a conventional means for removing or reducing the charge on the web that has undergone all of the aforementioned operations from being rolled into a roll, transported and eventually unrolled. This becomes apparent to the person of ordinary skill from the following explanation at Haynes '071, page 12, line 25 through page 13, line 1 (emphasis added):

If desired, conventional means 15 **for removing or reducing the charge on the web** may be employed

such as applying an oppositely charged field or ion cloud.

Thus, the person of ordinary skill is most likely to regard Kisler as merely providing another method and apparatus for performing this conventional step, which is already known by Haynes '071. Thus, Haynes '071 itself appears to preclude concluding as the Final Office Action proposes, namely, that the person of ordinary skill in the art would derive from Kisler providing an electrostatic charge emitter on each opposite side of a stream of fibers for the purpose of improving the degree of separation of the fibers or imposing a preferential orientation on the fibers. No such suggestion is made either expressly or impliedly in Kisler.

Applicants therefore respectfully submit that claims 1 and 3 are patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Kisler.

For the reasons explained below, applicants respectfully traverse the rejection of claim 2 under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1, and further in view of Trimble.

Trimble fails to correct the deficiency noted above in Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1. As per Trimble, page 15, lines 15 – 23 and Figs. 3 and 6, Trimble fails to dispose the pins 72 of any emitters on opposite sides of the fiber stream. Indeed, because this same deficiency is attributable to Haynes '071, Maggio '134 and Trimble, it appears more strongly than ever that disposing emitters on opposite sides of the fiber stream was not appreciated by persons of ordinary skill in this art. Applicants therefore respectfully submit that claim 2 is patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1, and further in view of Trimble.

For the reasons explained below, applicants respectfully traverse the rejection of claims 4 and 5 under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1, and further in view of Haynes '379 (USP 6,117,379).

Haynes '379 fails to correct the deficiency noted above in Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1. Moreover, Haynes '379 does not say anything about making a diverging sidewall become a vortex generator. Indeed, as to claim 5, Haynes '379 FIG. 3 shows the vortex generating arrangements 10 as converging rather than diverging. Each of these deficiencies supports applicants' contention that claims 4 and 5 are patentable under 35 U.S.C. 103(a) over Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1, and further in view of Haynes '379.

For the reasons explained below, applicants respectfully traverse the rejection of claim 11 under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 in view of Haynes '071 and Kisler.

Independent claim 11 calls for subjecting the fibers to, and charging the fibers with, an applied electrostatic charge while the fibers are in the diffusion chamber. The charge is applied by two or more oppositely directed electrostatic charging units wherein an emitter device of at least one of the units is located upon a first one of the diverging sidewalls in the diffusion chamber. A target device for at least another of the electrostatic charging units also is located on that same first one of the diverging sidewalls. Thus, with this arrangement, the electrostatic charge is generated from opposite directions by the oppositely directed charging units between the diverging side

walls with respect to the direction of travel of the plurality of fibers through the diverging chamber.

Maggio '381 (U.S. 6,974,316) differs from Maggio '134 in that Maggio '381 has one electrostatic charging unit disposed on one of the diverging sidewalls in the diffusion chamber instead of in the drawing slot. The deficiencies in Maggio '134, Haynes '071 and Kisler have been discussed above. They fail to disclose or suggest to the person of ordinary skill, the placement of emitters on opposite sidewalls of the slot. Maggio '381 does not overcome their main deficiency in the placement of emitters on opposite walls. Accordingly, the combination of Maggio '381 in view of Haynes '071 and Kisler suffers from this same deficiency discussed above. They fail to disclose or suggest to the person of ordinary skill, the placement of emitters on opposite diverging sidewalls.

Applicants therefore respectfully submit that claim 11 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Kisler.

For the reasons explained below, applicants respectfully traverse the rejection of claims 11 and 15 under 35 U.S.C. 103(a) as being unpatentable over Schmit in view of Kisler.

The apparatus of Schmit (U.S. Pub. No. 2004/0028763) discloses an arrangement wherein a single charging unit is configured within the diffusion chamber. In particular, referring to Figs. 2 and 3, the electric field is established between the electrode needles 11 and the target electrode or plate 8. These elements constitute a single charging unit, and do not satisfy the requirements of claim 11 calling for two such units to be oppositely disposed. Moreover, Schmit adds no more than does Maggio

'381 and Haynes '071 and thus in combination with Kisler continues to suffer from the deficiency noted above. They fail to disclose or suggest to the person of ordinary skill, the placement of emitters on opposite diverging sidewalls.

Claim 15 requires the diverging sidewalls to remain unvented. However, Schmit appears to vent the diverging sidewalls 14, 15 at openings 16 per Schmit paragraph [0021], lines 2 – 5 and FIG. 2 thereof.

Applicants therefore respectfully submit that claims 11 and 15 are patentable under 35 U.S.C. 103(a) over Schmit in view of Kisler.

For the reasons explained below, applicants respectfully traverse the rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 in view of Haynes '071 and Kisler as applied to claim 11, and further in view of Trimble.

For the reasons already explained above, Maggio '381 in view of Haynes '071 and Kisler fail to disclose or suggest to the person of ordinary skill, the placement of emitters on opposite diverging sidewalls. Moreover, as noted above, Trimble is not capable of correcting such deficiency. Applicants therefore respectfully submit that claim 13 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Kisler as applied to claim 11, and further in view of Trimble.

For the reasons explained below, applicants respectfully traverse the rejection of Claim 13 under 35 U.S.C. 103(a) as being unpatentable over Schmit in view of Kisler as applied to claim 11, and further in view of Trimble.

As noted above, Schmit in view of Kisler as applied to claim 11 fail to disclose or suggest to the person of ordinary skill, the placement of emitters on opposite diverging sidewalls. As noted above, Trimble fails to overcome this deficiency. Applicants

therefore respectfully submit that claim 13 is patentable under 35 U.S.C. 103(a) over Schmit in view of Kisler as applied to claim 11, and further in view of Trimble.

For the reasons explained below, applicants respectfully traverse the rejection of Claim 14 under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 in view of Haynes '071 and Kisler as applied to claim 11 and further in view of Haynes '379.

As noted above, Maggio '381 in view of Haynes '071 and Kisler as applied to claim 11 fail to disclose or suggest to the person of ordinary skill, the placement of emitters on opposite diverging sidewalls. As noted above in connection with Haynes '071 in view of Maggio '134 and Kisler as applied to claim 1, Haynes '379 fails to overcome this deficiency of the placement of emitters on opposite sidewalls. Applicants therefore respectfully submit that claim 14 is patentable under 35 U.S.C. 103(a) over Maggio '381 in view of Haynes '071 and Kisler as applied to claim 11 and further in view of Haynes '379.

For the reasons explained below, applicants respectfully traverse the rejection of claims 14 and 16 under 35 U.S.C. 103(a) as being unpatentable over Schmit and Kisler as applied to claim 11 and further in view of Haynes '379.

For the reasons explained above, the combination of Schmit and Kisler as applied to claim 11 is deficient in disclosing or suggesting the placement of emitters on opposite diverging sidewalls. For the reasons explained above, Haynes '379 is incapable of overcoming this deficiency. Moreover, Haynes '379 does not say anything about making a diverging sidewall become a vortex generator. Indeed, as to claim 16, Haynes '379 FIG. 3 shows the vortex generating arrangements 10 as converging rather than diverging.

Applicants therefore respectfully submit that claims 14 and 16 are patentable under 35 U.S.C. 103(a) over Schmit and Kisler as applied to claim 11 and further in view of Haynes '379.

For the reasons explained below, applicants respectfully traverse the rejection of Claim 23 under 35 U.S.C. 103(a) as being unpatentable over Maggio '134 in view of Davis et al.

Independent claim 23 requires that the pneumatic attenuation force is provided by air consisting of attenuation air only entering the drawing slot from the drawing slot side wall that opposes the drawing slot side wall upon which the electrostatic charging unit is located. Maggio '134 does not have an electrostatic discharge unit in the slot. The Maggio '134 electrostatic discharge unit is only disposed beneath the diffuser or in the diffuser, but not in the slot. Davis et al does not include an electrostatic charging unit and thus cannot suggest an orientation of its air nozzle 32 with respect to an electrostatic charging unit. Moreover, as shown in Davis et al FIG. 1, the air nozzle 32 is directed toward plate 26, which forms part of a diverging passage. Thus, notwithstanding the misleading terminology in Davis et al, it is apparent that the Davis et al nozzle 32 is used in the diffuser portion of the Davis et al apparatus. In view of these deficiencies, the Maggio '134 and Davis et al combination fails to disclose or suggest attenuation air only entering the drawing slot from the drawing slot side wall that opposes the drawing slot side wall upon which the electrostatic charging unit is located.

Applicants therefore respectfully submit that Claim 23 is patentable under 35 U.S.C. 103(a) over Maggio '134 in view of Davis et al.

Applicant respectfully requests reconsideration and reexamination of claims 1 – 5, 11, 13 – 16 and 23 as presented herein, and submits that these claims are in condition for allowance and should be passed to issue.

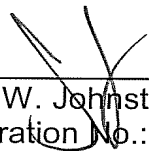
With the present Amendment, it is respectfully submitted that all of the claims under consideration are allowable. Upon indication of the allowability of such claims, the withdrawn claims will be cancelled and the provisional double patenting rejection will be overcome with a properly executed Terminal Disclaimer.

If any fee or extension of time is required to obtain entry of this Amendment, the undersigned hereby petitions the Commissioner to grant any necessary time extension and authorizes charging Deposit Account No. 04-1403 for any such fee not submitted herewith.

Respectfully submitted,

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